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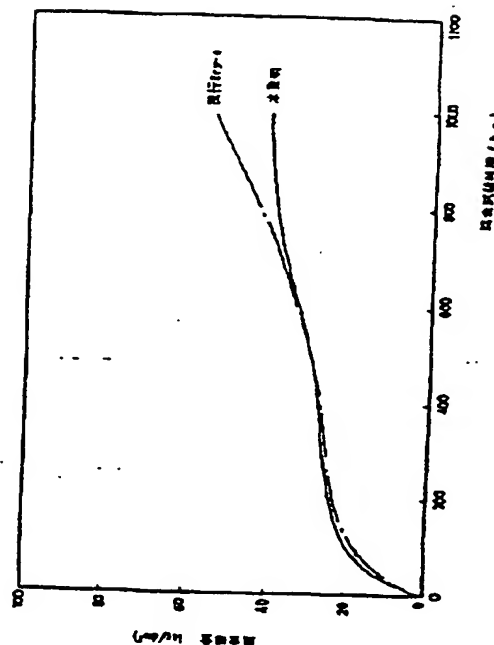
PUBLICATION NUMBER : JP4128687
PUBLICATION DATE : 30-04-92
PUBLICATION NUMBER : JP900248908
PUBLICATION DATE : 20-09-90

CL: 16 NO: 393 (P - 1406)
P. DATE : 20-08-1992 PAT: A 4128687
INVENTOR : NUCLEAR FUEL IND LTD
INVENT DATE: 30-04-1992

INVENTOR : OE AKIRA

INT. CL. : G21C3/07; G21C3/06

INT. CL. : COVERING TUBE FOR NUCLEAR
FUEL AND ITS MANUFACTURE



ABSTRACT : PURPOSE: To ensure corrosion resistance by manufacturing a fuel rod covering tube for cluster of nuclear fuel by a zirconium alloy consisting of Sn, Fe, Cr, Nb, Ni, O, C, Si, the remainder of Zr and inevitable impurities.
CONSTITUTION: In the manufacturing process of a fuel covering tube for cluster of nuclear fuel, a zirconium alloy consisting of Sn: 0.9 - 1.2wt%, Fe: 0.24 - 0.30wt%, Cr: 0.13 - 0.19wt%, Nb: 0.05 - 0.15wt%, Ni: 0.005 - 0.02wt%, O: 1,000 - 1,500ppm, C: 100 - 200ppm, Si: 20 - 200ppm; the remainder of Zr, and inevitable impurities is produced, and when a tube is manufactured by rolling of the alloy, the degree of work in a final cold-working process ranged, for example, from 60 to 70%, and the R_{fr} value of the >>0002 face of the inside surface of the covering tube is adjusted to 0.65 to 0.75. The corrosion test results of the covering tube and a conventional zircaloy - 4 in the vapor of 400 deg.C are as shown in the drawing, and the covering tube has superior corrosion resistance compared to the conventional zircaloy - 4.